

REMARKS

Claims 1-4, 8-12, and 37-59 are pending in the application with claims 1, 8, and 37 being the independent claims. Claims 5-7 and 13-36 are cancelled without prejudice to or disclaimer of the subject matter therein. Claims 1 and 8 are amended. Claims 40-59 are newly added.

Rejections under 35 U.S.C. § 102

The Office Action indicated that claims 1-2, 8-12, and 37-39 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,402,750 to Atkinson et al. (“Atkinson”).

Claim 1

Claim 1 is directed to a surgical implant for replacing functions of a facet joint. In particular, claim 1 recites:

1. A surgical implant for replacing functions of a facet joint between adjacent vertebrae, the surgical implant comprising:

a first biocompatible attachment device for attaching to a first pedicle of a superior vertebrae;

a second biocompatible attachment device for attaching to a second pedicle of an inferior vertebrae; and

a flexible member attached to the first and second biocompatible attachment devices;

wherein the first and second biocompatible attachment devices are positioned, and the flexible member is adapted, so that the surgical implant applies a distracting force between the first and second pedicles of the superior and inferior vertebrae sufficient for selectively maintaining the first and second pedicles at a predetermined distance.

However, Atkinson does not disclose all the features of claim 1. Specifically, Atkinson does not disclose a “first and second attachment devices “for attaching to . . . pedicle[s]” and

does not disclose positioning first and second attachment devices adapted to apply “a distracting force between the first and second pedicles . . . for selectively maintaining the . . . pedicles” at a predetermined distance. Instead, Atkinson discloses attaching a dynamic bias device at attachment points labeled A-N in Figs. 1A and 1B. See Atkinson, column 12, lines 15-16. Of these, points D and E appear closest to the pedicles. However, “attachment points D and E refer to the posterior surfaces of the left and right laminae 23.” See Atkinson, column 12, lines 25-26. The laminae are not the pedicles as claimed.

In addition, while discussing the attachment points, Atkinson states, “the more posterior the attachment points, the less invasive the procedure will be. Attachment points A, B, C, H and I are preferred for this reason. In addition, to avoid interfering with the motion of the vertebrae, the dynamic bias device 140 is preferably disposed laterally or posteriorly of the spinous processes 24, as opposed to under and between the spinous processes 24.” See Atkinson, column 13, lines 9-15. Accordingly, it appears that the patentees excluded the pedicles as attachment points in order to ensure that the procedure is the least invasive. Therefore, claim 1 appears patentable over Atkinson. Applicants respectfully request that the Examiner withdraw the rejection and allow claim 1.

Claims 2-4 depend from and add additional features to independent claim 1. Therefore, these claims should be allowable for at least the reasons that claim 1 is allowable. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection and allow these claims.

Claims 8-12

Claim 8 recites:

8. *A prosthetic device for replacing functions of a facet joint between adjacent vertebrae, the prosthetic device comprising:*

means for providing one or more flexible posterior devices to replace main functions of the facet joint; and

means for adapting a first one of the one or more posterior devices for a first attachment to a first transverse process, and a second attachment to a second transverse process, and wherein the one or more flexible posterior devices includes a joint component positioned between the first and second biocompatible attachment devices.

Atkinson does not disclose all the features of amended claim 8. Claim 8 is amended to include a joint component, as recited in original claim 3. Claim 3 was rejected under 35 U.S.C. § 103. Accordingly, further discussion of claim 8 is provided below relative to the § 103 rejections.

Claims 9-12 depend from and add additional features to independent claim 8. Therefore, these claims are not anticipated by Atkinson for at least the reasons that claim 8 is not anticipated by Atkinson. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection of these claims.

Claims 37-39

Claim 37 is directed to an anterior prosthetic device system for replacing functions of a facet joint between adjacent vertebrae. It recites:

37. An anterior prosthetic device system for replacing functions of a facet joint between adjacent vertebrae, the anterior prosthetic device system comprising:

means for providing one or more flexible anterior devices to replace main functions of the facet joint; and

means for adapting a first one of the one or more anterior devices for insertion between adjacent vertebral bodies.

However, Atkinson fails to disclose all the features of claim 27. Atkinson discloses implanting reinforcement members 200 in the anterior region of the spinal column, but rather

than being “flexible anterior devices” as recited in claim 37, the devices in Atkinson are “relatively rigid.” See Atkinson, column 8, lines 7-9; column 19, lines 16-18.

Claims 38 and 39 depend from and add additional features to independent claim 37. Therefore, these claims should be allowable for at least the reasons that claim 37 is allowable. Accordingly, Applicants respectfully request that the Examiner withdraw the rejection and allow these claims.

Rejection Under 35 U.S.C. §103

The Office Action indicated that claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Atkinson in view of U.S. patent No. 6,652,257 to Zucherman et al. (“Zucherman”). Claims 3 and 4 depend from claim 1 and therefore should be allowable for the same reasons that claim 1 should be allowable. In addition, applicants submit that claim 3 is allowable for reasons independent of claim 1. Further, by this paper, claim 8 is amended to recite a joint as in claim 3. Accordingly, a discussion of the patentability of claims 3 and 8 is included below.

The combination of Atkinson and Zucherman fail to establish a *prima facie* case of obviousness with regard to claim 3 and amended claim 8 because Atkinson teaches away from a flexible device having a joint. Atkinson explains that its dynamic device 100 “preferably operates with substantially linear displacement substantially parallel to the axis of curvature 60.” See Atkinson, column 9, lines 62-64. It discusses at length calculating its forces using linear models. See Atkinson, column 10, lines 20-49. Even when discussing a leaf spring embodiment, it states that the “radius or axis of curvature of the leaf spring 142 is preferably maximized such that displacement of the attachment members 144 is substantially linear.” See Atkinson, column 18, lines 22-25.

In addition, the combination of Atkinson and Zucherman fail to establish a *prima facie* case of obviousness with regard to claim 3 and amended claim 8 because if combined,

Zucherman's intended function is destroyed. Zucherman provides a "method and apparatus for assisting in the fusing together of vertebral bodies of the spine." See Zucherman, column 2, lines 13-15. Accordingly, implementing a system as disclosed in Zucherman in the dynamic device in Atkinson would destroy Zucherman's intended function of eliminating movement between vertebrae. Zucherman does not disclose a device that replaces functions of a facet joint. Therefore, the combination of Atkinson and Zucherman appears to be improper and should not render claims 3 or 8 unpatentable.

New Claims

This paper includes new claims 40-59, depending directly or indirectly from claims 1 and 8. Each of these claims includes a joint limitation and should be allowable over the art of record.

Conclusion

For at least the reasons set forth above, independent claims 1, 8, and 37 are in condition for allowance. Dependent claims 2-4, 9-12, 38, and 39 depend from and add additional features to the independent claims and, therefore, also are in condition for allowance. Applicants submit that new claims 40-59 are also in condition for allowance. Accordingly, Applicants respectfully request that the Examiner withdraw the outstanding rejections and issue a formal notice of allowance.

If the Examiner determines that a telephone discussion would answer questions, aid, or expedite the examination of this application, the Examiner is invited to telephone the undersigned at 972-739-6969.

Please grant any extension of time required to enter this response and charge any additional required fees to our Deposit Account No. 08-1394.

Respectfully submitted,



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Dated: October 10, 2006

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R146297

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